DOCUMENT RESUME

ED 311 072 TM 013 909

AUTHOR Lambert, Matthew E.; Plescia, Joanne
TITLE Instruments for Assessing Substance Abuse: A Review.
PUB DATE Apr 89
NOTE 38p.; Paper presented at the Annual Meeting of the Southwestern Psychological Association (35th, Houston, TX, April 13-15, 1989).
PUB TYPE Speeches/Conference Papers (150) -- Reference Materials - Directories/Catalogs (132)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Alcohol Abuse; *Drug Abuse; Drug Addiction; *Evaluation Methods; Interviews; Literature Reviews; Measurement Techniques; Measures (Individuals); *Psychometrics; Questionnaires; *Substance Abuse; Test Reviews
IDENTIFIERS *Assessment Instruments; Dependency (Personality); Self Report Measures

ABSTRACT

A review of the assessment literature on substance abuse has revealed 27 separate instruments for assessing substance abuse. These include 22 alcohol instruments and five instruments for assessing other drug abuse. The instruments are listed in a table that provides the title, source, description, population, and psychometric properties of each test. These instruments were reviewed for their attention to the various aspects of substance abuse: (1) use history; (2) social impairment; (3) occupational impairment; (4) physical impairment; and (5) legal consequences. Similarities and dissimilarities in the instruments are described. Whether oriented toward alcohol use or other drug use, these instruments tend to have two foci. The first has to do with elucidating the dependence syndrome experienced by the substance abuser. Dependence is characterized by the substance use behavior and its impact on the person. The other focus is the dependence severity focus. This focus assumes a state of dependence and seeks to determine the severity of dependence. Severity ratings are typically composite scores made from the subscales in the severity instruments. Each of the instruments presented in the table has undergone psychometric evaluation and has been found to have general reliability and validity. The instruments reviewed have little to offer in treatment planning, and much more work is needed to develop instruments with predictive validity for dependency development. An 83-item list of references is included. (SLD)

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INSTRUMENTS FOR ASSESSING SUBSTANCE ABUSE: A REVIEW

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PAPER PRESENTED AT THE 35TH ANNUAL CONVENTION OF THE SOUTHWESTERN PSYCHOLOGICAL ASSOCIATION, APRIL 13-15, 1989, HOUSTON, TEXAS

Abstract

With the increasing attention being given to treating substance abuse in our society, concern has also risen over what substance abuse actually is and how it is assessed. A review of the assessment literature on substance abuse revealed twenty-seven separate instruments for assessing substance abuse (22 Alcohol Instruments & 5 Drug Abuse Instruments). These instruments were reviewed for their attendance to the various aspects of substance abuse (use history; social, occupational, physical impairment; and legal consequences) and well as their psychometric properties. Similarities and dissimilarities in the instruments were elucidated along with current needs for future substance abuse assessment instruments.

Numerous instruments have been developed to assess substance abuse problems (see accompanying table). The majority of these instruments have focused on alcohol and alcohol dependency. Only within the past 10 years have instruments been developed for assessing drug use. Regardless, however, of the type of substance assessed these instruments tend to have one of two basic foci. The first focal area has to do with elucidating the dependence syndrome as experienced by the substance abuser. Dependence is characterized by the substance use behavior (i.e., frequency and quantity of use) and the impact of such use on the person (i.e., social, occupational, and legal). Instruments such as the SADD, ADS, EADS, and DAST exemplify Dependence instruments. Similar to the Dependence focus is the Dependence Severity focus. This focus assumes a state of dependence and seeks to determine the severity of dependence. Severity ratings are typically composite scores made up of the subscales found in the severity instruments. Examples of severity instruments include the ASI, MASS, SADQ, and PAS. Two other scales are also listed in the table, the AEQ and SAP which assess predisposition toward substance abuse.

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Each of the instruments presented in the table has undergone psychometric evaluation. General reliability and validity have been found for the scales. Much more extensive psychometric evaluation, however, is needed for the majority of these scales before they can hope to achieve widespread utility.

Although the instruments presented in this paper represent the current state of substance abuse assessment additional scales are necessary. Instruments with discriminative treatment utility are particularly needed. As is, the instruments presented in this paper have very little to offer in treatment planning. Additionally, instruments useful for discriminating early stage substance abusers are needed. Most of the instruments currently available are useful in determining if the person has a dependency problem and how severe it is. More work is needed to develop instruments with predictive validity for dependency development.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Absolute Alcohol-Quantity Pattern Index (AAQP)	Little, Schultz, & Mandell (1977)	Assesses alcohol consumption during the previous 6 months using a structured interview. Produces an A-A score of the daily average of absolute alcohol ingested and a Q-P scale indicating how often the person has 5 or more drinks on a single occasion.	Scale originally validated with 156 women interviewed during their 4th month of pregnancy. System can be used with other, more divergent, samples.	Concurrent validity estimated by comparison to other indices of drinking behavior. No reliability analyses conducted.
Addiction Severity Index (ASI)	McLellan, Luborsky, Woody, & O'Brien (1980)	Structured interview to collect objective and subjective information on problem symptoms in 6 areas during the past 30 days: (1) Chemical Abuse, (2) Medical, (3) Psychological, (4) Legal, (5) Family/Social, and (6) Employment/Support. Severity judgments are made on a 0-4 scale.	Original study conducted with 524 male substance abuse patients. Instrument can be used with either adult alcoholics or drug abusers to gain index of addiction severity impacting on treatment.	Interjudge reliability ranged from .74 to .91 for the 6 problem areas. Test-Retest reliability 3 days was .92 or higher for all problem areas. Concurrent and discriminant validity analyses were conducted that supported the ASIs use.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Alcadd Test (ALCADD)	Manson (1949)	The ALCADD consists of 60 YES-NO items related to drinking behavior and drinking history. It was designed to provide for objective recognition of the characteristics of alcoholics for purposes of clarifying the psychodynamics underlying alcoholism	The ALCADD was designed for use with adult male and female alcoholics.	Kuder-Richardson reliability coefficients for males and females were .92 and .96 respectively. Validity research indicated that the ALCADD was successful in discriminating over 90% of alcoholic males and females from non-alcoholic groups. Analysis of the ALCADD items revealed 5 item clusters (factors) that grouped together and represented different aspects of alcoholism.
Alcohol Dependence Data-Short Form (SADD)	Raistrick, Dunbar, & Davidson (1983)	The SADD is a 15 item, self-report questionnaire designed to assess the unitary dimension of alcohol dependency. Each item is scored 0-3 indicating frequency of the item. Higher scores indicate greater dependency.	Originally tested with adult males and females. Unitary syndrome of alcohol dependence is not restricted by sex, yet may be restricted by age.	Split-half reliability was estimated at .87. Correlations of items to total score ranged from .47 to .81. Discriminant validity assessed between non-drinkers, psychiatric patients, and self-referred alcoholics with significant differences found.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Alcohol Dependence Scale (ADS)	Skinner & Allen (1982)	A 29 item self-report measure assessing 4 dependence areas: Loss of Behavioral Control, Obsessive Drinking Style, Psychoperceptual Withdrawal, and Psychophysical Withdrawal. The scale, however, assesses a unitary dimension of dependence.	Originally validated with adult males and females voluntarily seeking treatment for alcohol problems. Instrument is designed for use with adults.	Internal Consistency reliability estimate was .92. Significant correlations were found with the AUI scales and the MAST. The ADS demonstrated adequate predictive validity for treatment seeking.
Alcohol Evaluation Instrument (AEI)	Davidson & Stein (1982)	A 24 item self-report questionnaire designed to assess Drinking Behavior, Occupational and Educational Status, Social Functioning, Living Arrangements, Support Systems, and Health Information.	Validated with adult males at a VA Hospital. Designed for use with male and female adults.	Test-retest reliability at intake and 6 weeks later revealed correlations of .699 to .999 for the individual items. Most reliable items related to demographic variables, recent historical data, drinking history, and occupational functioning. Factor analysis revealed 9 independent factors related to the above categories.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Alcohol Expectancy Questionnaire (AEQ)	Brown, Christiansen, & Goldman (1987)	The AEQ is a 90 item self-report questionnaire designed to assess expectancies for specified effects resulting from alcohol consumption. Six and 7 expectancies are assessed with the Adult and Adolescent forms respectively.	Adult and adolescent forms of the AEQ are available. Separate validation studies have been conducted with each form.	Internal consistency of the AEQ scales ranged from .72 to .92 for the adult version and .47 to .82 for the adolescent version. Eight week test-retest reliability was .64 and .52 for the adult and adolescent versions. Significant predictive validity was demonstrated for relapse after treatment as well as discriminant validity with social desirability and deviancy.
Alcohol History Form (AHF)	Evenson, Altman, Sletten, & Knowles (1973)	The AHF is a two-part self-report instrument consisting of 76 items that generate 157 variables. The instrument yields scores on 15 factors describing different aspects of alcohol use and concomitant lifestyles.	The AHF is part of an overall computer-based patient information system for use with adult inpatients at state psychiatric facilities.	Discriminant function analyses significantly discriminated among three groups of patients based on their symptoms.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Alcohol Involvement Scale (AIS)	Gillies, Aharan, C., Smart, R. G., & Shain, M. (1975)	The AIS is a 35 item self-report scale designed to assess behaviors considered indicative of alcoholism. Each item is responded to on a 5 point Likert scale with several items being reversed. Each response is then scored on a 0-4 basis and summed overall to yield the AIS score. The AIS is also designed to measure changes in drinking behavior over time.	The AIS was originally developed with adult normals and inpatient alcoholics. No sex distinctions for ASI use have been postulated.	Two week test-retest reliability for 30 of the AIS items with normal subjects was .87. Comparison with 30 inpatient alcoholics revealed no differences in reliability estimates. Item consistency analysis revealed a high relationship between the 35 AIS items. Convergent and discriminant validity analyses indicated relationship between the AIS and other alcoholism measures and a lack of relationship with other measures.
Alcohol Poly-Diagnostic Interview (APDI)	Boyd, et. al. (1983)	This is a 96 item structured interview that assesses symptoms characteristic of 10 definitions of alcoholism. Diagnoses based on these definitions can be reached from APDI use.	Original validation work conducted with adult outpatients receiving alcoholism treatment. The APDI is designed for use with adults.	All patients in the validation sample were diagnosed alcoholic with the APDI for 7 of the 10 diagnostic schemes. At least 78% of the patients were diagnosed alcoholic by the remaining three definitions.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Alcohol Stages Index (ASI)	Mulford, H. K. (1977)	The ASI is a 27 item self-report questionnaire designed to assess advancement through 4 nonsequential stages of alcoholism. The 4 stages are: Trouble Due to Drinking, Personal-Effects Drinking, Preoccupied Drinking, and Uncontrolled Drinking. The ASI may be beneficial for identifying early stage problem drinkers and seeks to dispel the sequential notion of alcoholism.	The initial ASI population consisted of predominantly adult male alcoholics and problem drinkers presenting for treatment at numerous state operated alcoholism treatment centers. The ASI, however, may be used with adult males or females.	Reliability of the ASI has not been established. ASI validity has been indicated by comparing the number of scales qualified on to several external indicators of alcoholism/problem drinking severity. The ASI was found to be highly related to those external criteria and indicative of recovery from alcoholism or reestablishment of responsible drinking patterns.
CAGE Questionnaire (CAGE)	Ewing & Rouse (1970)	The CAGE consists of four questions asked during a clinical interview. The questions focus on aspects of drinking behavior: Cutting down, Annoyance by criticism, Guilty feelings, and Eye Openers. Two to four positive responses can be construed as pathonogmonic.	The CAGE was originally developed and used with adult alcoholics presenting for alcoholism treatment. The CAGE may be used to screen for alcoholism in a variety of health care settings.	The CAGEs discriminant validity has been demonstrated in several treatment populations. Use of the CAGE questions effectively discriminates alcoholics from non-alcoholics at or above the 90% range.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Clinical Alcoholism Interview Schedule (CAIS)	Caetano, Edwards, Oppenheim, & Taylor (1978)	The CAIS is a 50 question standardized clinical interview for initial assessment of alcoholic patients. The schedule is arranged into 7 sections which address recent and past drinking behavior; impairment in psychological, social, and physical functioning; and previous alcohol treatment.	The CAIS was developed for use with adult alcoholics presenting for treatment. The instrument is not designed for use as a general screening instrument, but rather as a clinical tool for use in treatment planning.	Interrater reliability for the 50 questions indicated a mean of 89% across 5 raters. Approximately 10 items evidenced poor reliability and these items related to Jellinek's alcoholic stage model. No validity data for the CAIS was presented.
Edinburgh Alcohol Dependency Schedule (EADS)	Chick (1980)	The structured instrument contains 44 items assessing 26 alcohol use related symptoms. Items tap seven known dimensions of the alcohol dependence syndrome. Each items is scored with point ratings given by the interviewers.	Instrument was originally validated with adult male alcoholics admitted to inpatient treatment. Instrument may be used, however, with male and female adult alcohol dependent individuals.	Interrater reliability for the 44 items ranged from .77 to 1.00. All interrater reliability coefficients were significant at or below the .01 level. No other reliability or validity data were presented.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Hilton Drinking Behavior Questionnaire (HDBQ)	Hilton & Lokare (1978)	This 34 item self-report questionnaire provides a unitary measure of alcohol dependence. Frequency ratings of certain drinking related problems is the instruments focus.	This instrument was designed for use with adult inpatient/outpatient alcoholics. It may also be used to differentiate alcoholics from patients with other psychiatric problems.	Reliability based on coefficient alpha was rated at .98. Discriminative validity was established by significantly discriminating groups of alcoholics from controls based upon HDBQ scores. Construct validity was established by correspondence of HDBQ scores to other alcohol dependency indices.
KARTAD Scale to Measure Severity of Alcohol Problems (KARTAD)	Sandahl, Lindberg, & Bergman (1985)	The KARTAD is a 7 item self-report instrument covering drinking behavior during the past 6 months. The areas addressed by the KARTAD reflect alcohol consumption, symptoms of alcohol dependence, and length of time sober. Results are given as a 4 point ordinal scale severity index.	The KARTAD was originally validated with male and female, former alcohol treatment patients during a treatment follow-up study. The instrument was designed to assess patterns of adult alcohol use.	Validity information presented for the comparison of groups at each severity rating level. Significant correlations were observed between the KARTAD severity rating and archival data on alcohol related treatment following initial alcohol treatment.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Last Month of Drinking Scale (LMDS)	Hesselbrock, Babor, Hesselbrock, Meyer, & Workman (1983)	The self-report LMDS assesses withdrawal symptoms and drinking behavior during the month just prior to hospital admission. It also assess subclinical withdrawal symptomatology in the areas of somatic discomfort and psychological disturbance. Items relating to alcohol consumption during the past 30 days are also included.	The LMDS is designed for use with male or female adult alcoholics admitted for inpatient alcoholism treatment.	Factor analysis of the LMDS revealed three specific factors with item-total correlations for each factor indicating relatively unique factors. Satisfactory concurrent validity was found by comparing LMDS scores with reports from collateral sources. Construct validity with other alcohol instruments (i.e., MAST & MAC) yielded coefficients of -.04 to .38 for the 3 LMDS factors.
Last Six Months of Drinking Scale (LSMDS)	Hesselbrock, Babor, Hesselbrock, Meyer, & Workman (1983)	The self-report LSMDS assesses drinking experiences and consequences, motivational supports for drinking, and quantity and frequency of drinking over a six month time period. The LSMDS was designed to assess behavioral and attitudinal variables as well as consumption indices.	The LSMDS was designed and validated for use with adult patients in inpatient alcohol treatment facilities.	Factor analysis of the LSMDS revealed three specific factors with item-total correlations for each factor indicating relatively unique factors. Satisfactory concurrent validity was found by comparing LSMDS scores with reports from collateral sources. Construct validity with other alcohol instruments (i.e., MAST & MAC) yielded coefficients of .13 to .46 for the 3 LSMDS factors.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
MacAndrew Alcoholism Scale (MAC)	MacAndrew (1965)	The MAC is a 49 item true-false questionnaire derived from the MMPI. Only two of the items directly assess alcohol consumption while the remaining items address personality dimensions characteristic of alcoholics. A cutting score of 24-28 typically indicates an alcoholic personality.	The MAC was primarily developed to identify adult male alcoholics. Over the past twenty years numerous studies have produced norms for identifying adult and adolescent alcoholics of both sexes.	Various reliability coefficients for the MAC have proven relatively robust over the course of the MACs history. Similarly, the wealth of studies surrounding the MAC support its discriminant validity for distinguishing alcoholic and alcohol prone groups from non-alcoholic or psychiatric groups.
Michigan Alcoholism Screening Test (MAST)	Selzer (1971)	The MAST is a 25 item self-report inventory designed to measure aspects of drinking behavior. Responses are given to Yes-No questions and the sum of weighted item scores provides an index of alcohol use behavior. Higher scores indicate greater drinking problems. Scores of 5 or greater indicate alcohol related problems.	The MAST was originally validated with treatment seeking alcoholics. Numerous studies have used the MAST to assess both adolescent and adult populations in a variety of settings. The MAST may realistically and effectively be used with virtually any population.	The MASTs psychometric properties have been investigated for numerous populations. Test-retest reliabilities and internal consistency measures have typically been .80 or greater. Discriminant validity for various populations has also been established for the MAST.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Missouri Alcoholism Severity Scale (MASS)	Evenson, Holland, & Cho (1979)	The MASS is a 20 item self-report scale derived from a larger alcoholism severity scale. The MASS is designed to assess aspects of alcohol related behaviors that could be expected to reflect change following treatment. Item score totals reflect alcohol severity ratings.	Original development occurred with adult, male, inpatient alcoholics. Instrument is applicable to any male or female adult population, however.	Kuder-Richardson reliability estimates for the scale was found to be .84. Test-retest correlations across classes of alcoholics was found to be .74. Validity is supported by observed differences in pre and posttest scores as well as score differences between inpatient and outpatient groups.
Severity of Alcohol Dependence Questionnaire (SADQ)	Stockwell, Hodgson, Edwards, Taylor, & Rankin (1979)	The SADQ is a 20 item questionnaire assessing 5 aspects of alcohol dependence: Physical Withdrawal, Affective Withdrawal, Withdrawal Relief, Typical Daily Consumption, and Rapidity of Symptom Reinstatement Following a Period of Abstinence.	The instrument is designed for use in treatment planning for adult alcoholics during inpatient or outpatient treatment.	Test-retest reliability coefficients for the 20 items ranged from .55 to .82. Reliability for section and total scores ranged from .76 to .85. Construct validity was established by comparing SADQ scores from inpatient and outpatient populations. SADQ scores were also compared to physician ratings and laboratory tests.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Drug Abuse Screening Test (DAST)	Skinner (1982)	The DAST is a 28 item self-report inventory designed to measure aspects of drug use behavior. It was derived from the Michigan Alcoholism Screening Test (MAST), reflecting similar content. DAST scores are computed by summing all items positively endorsed for drug use. Higher scores indicate greater drug use.	The DAST is designed for use with adult male and female drug users. Original validation research was conducted with a combined group of alcohol, drug, and poly-substance abusers who abused cannabis, CNS depressants, hallucinogenics, and amphetamines.	Inter-total score correlations ranged from .24 to .78 for the 28 items. One-way analysis of variance for total DAST scores demonstrated significant differences between the alcohol, drug, and poly-substance abuse groups. Factor analysis yielded information supportive of a singular dependency factor. DAST scores were also found to correlate with other drug use indices.
Drug Involvement Scale for Classification of Drug Abusers (DISCDA)	Gunderson, Russell, & Nail ( )	The DISCDA is designed for clinicians to use in rating the degree of involvement in illicit drug use. Areas rated include: Type of Drug, Usage Rate, Method of Use, Age Started Drug Use, and Duration of Drug Involvement. Ratings in each area are summed to yield a composite score of drug involvement.	Original validation studies were conducted with Navy and Marine Corps enlisted men during 1971. No information is available on validation work with civilian populations.	Preliminary analyses of DISCDA scores indicated some utility for differentiating patients who had low vs. high drug involvement. No direct data, however, is reported regarding the DISCDA's psychometric properties.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Drug Use Index (DUI)	Douglass & Khavari (1978)	The DUI is based on a questionnaire of drug use behavior for 19 different drugs and drug categories. From this questionnaire, weighted/standardized scores are summed to yield an overall index of polydrug use.	Original validation work was conducted with industrial workers and college students. The DUI can be used with any male or female poly-drug user.	Intercorrelations between scores for the 19 drug classes or categories ranged from -.02 to .77. Concurrent validity analyses indicated that DUI scores were significantly related to measures of neuroticism, extroversion, and social desirability.
Polydrug Assessment Scale (PAS)	Khavari & Douglass (1978)	The PAS is a 20 item self-report measure designed to assess polydrug use. Items assess aspects of behavior that may influence drug use rather than the use of actual substances. Each item is weighted in relation to its impact on drug usage. The sum of weighted items scores yields the overall PAS score.	The PAS is applicable to adult male and female drug users and has utility for treatment planning.	Spearman-Brown and test-retest reliability analyses yielded coefficients of .80 and .84 respectively. Individual item-total correlations were substantially lower. Discriminative validity analyses indicated utility in using PAS scores for differentiating above average vs. below average polydrug users.

INSTRUMENT	SOURCE	DESCRIPTION	POPULATION	PSYCHOMETRIC PROPERTIES
Substance Abuse Proclivity Scale (SAP)	MacAndrew (1986)	The SAP is a 36 item self-report scale derived from MMPI items. The items can be used to assess potential for substance abusive behavior. Scores are calculated by summing the number of items keyed in the criterion direction.	The SAP scale was designed for early detection of young adult substance abusers. Initial validation work focused on young males receiving either alcohol or drug treatment. No information is available for young adult females.	Discriminative validity of SAP scores was determined by comparing scores of six different groups of clientele with varying degrees of substance use. SAP scores were used to successfully discriminate those groups. The detection rate for substance abusers from these groups using SAP scores was 85.3%. No reliability information is currently available.

Instruments for Assessing Substance Abuse:
A Review

Matthew E. Lambert, & Joanne Plescia

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